

Newsletter

Volume 36, Number 8, May 2006

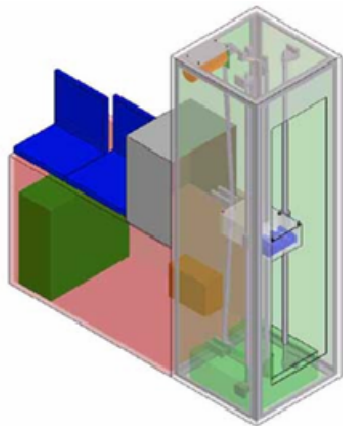
SEDS Microgravity Project

Jeff Boulware – University of Washington

Dave Hege – Pasco High School Instructor

Stefanie Garcia, Erin Anderson, Arieal Hale, and Paulo Orozco – Pasco High School Students

The May dinner meeting will feature Jeff Boulware of the University of Washington Students for the Exploration and Development of Space (SEDS), Pasco High School instructor Dave Hege, Pasco High School students Stefanie Garcia, Erin Anderson, Arieal Hale, and Paulo Orozco. The SEDS project is a follow-up to an experiment begun two years ago in the spring of 2004 by four UW AA seniors. The students flew on NASA's KC-135, the "Weightless Wonder," to perform a fluid mechanics experiment involving microgravity testing of varying acceleration on Rayleigh-Taylor flow. Rayleigh-Taylor flow is a fluid mechanics phenomenon involving the mixing of immiscible fluids of different densities. Applications of interest include weather patterns, supernovae, and, most notably, inertial confinement nuclear fusion. Numerical simulations were performed at the Lawrence Livermore National Laboratory; however, these simulations lack the experimental verification necessary. Currently, no 1g testing of varying acceleration on Rayleigh-Taylor flow has been



performed due to the strenuous testing parameters involved. By reducing the magnitude of testing from 1g to 0.1g, the velocities, track lengths, and momentums involved also decrease by factors of 10. The spring 2004 experiment provided data unparalleled to any other in the world; however the results were still inconclusive.

To help stimulate interest in math and science in high schools, a science competition was



organized between five Washington high schools for designing a second microgravity experiment. Pasco High School was selected and will present their experiment in studying Rayleigh-Taylor Instability in microgravity, specifically how water and air mix. The experiments will measure ripples and determine if the frictional and adhesive forces will still overcome the cohesive forces in a microgravity environment.

In August, the high school students and their teacher will fly in microgravity with the university students. Long term results of this project include the establishment of an annual high school outreach program for the UW.



Joint AIAA/SFTE Presentation

Date: **Tuesday, May 16, 2006**
Place: Old Spaghetti Factory, Seattle, WA
Time: 6:00 pm Social, no-host bar.
6:30 pm Dinner
7:15 pm Presentation
Dinner Price: **\$15** AIAA & SFTE Members & Guests
\$18 Non-Members

\$5 Students & Educator Associates
Program Only: \$5 (Free for persons 17 and under)
Please RSVP online at www.pnwaiaa.org or e-mail reservations@pnwaiaa.org (including meal choice). You will receive a confirmation e-mail. Please make reservations by Monday, May 15th.
Please note a reservation is a commitment to pay.

Events



World War I Aerodynamics

The April dinner meeting featured University of Washington students speaking on wind tunnel results of World War I airplanes. The project, subsidized by AIAA research funds, was presented at the region student conference in early April.

Left to right:
Elishka Jackson, Garrett Klovdahl,
Bethany Martin, Dr. Scott
Eberhardt, Dave Lednicer.

May Retirees Meeting

David Polland will talk at the May 20th Retiree meeting at the Skyline room in the Museum of Flight. He will speak on the structural characteristics of Boeing's new model 787 airplane. The meeting will begin at 9:00 a.m. The event fee of \$17 includes breakfast.

On September 16th, Bonnie Dunbar, the new CEO of the Museum of Flight, will be speaking. Everyone is invited to attend. Please RSVP with Tom Holgate-contact information can be found on the last page.

5th Annual PNW AIAA Billiards Night-Sponsored by AIAA Young Professionals



PNW Calendar	
Tuesday, May 16th	
Speaker:	Jeff Boulware & Pasco High School
Topic:	SED Zero Gravity Project
Saturday, May 20th	
Museum of Flight Restoration Center Tour	
11:00 to 12:00 pm	
Tuesday, June 20th	
Speaker:	Ratan Khatwa
Topic:	Flight Deck Design-The Human Factor Challenge
August	
SeaFair Airshow	
Seward Park, Seattle, WA	
* Meetings begin at 6:30 PM at the Old Spaghetti Factory, Seattle, WA.	
Retired Members Brunch	
Saturday, May 20th, 9:00 AM	
Speaker:	David Polland
Topic:	Boeing 787 Structural Characteristics
Location:	Museum of Flight, Seattle, WA
Speaker:	Dr. Bonnie Dunbar
Topic:	TBD
Location:	Museum of Flight, Seattle, WA
Contact:	Tom Holgate (253) 838-0333

meeting with the staff of both of Washington's Senators and 8 out of 9 Representatives. The Team was able to meet personally with Representative Rick Larsen who gave them an overview of his recent trip to China, which included a visit to the Shenzhou launch site. During the course of the day, Representative Rick Larsen's office was kind enough to provide the Team with a guided tour of the U.S. Capitol Building. After the day's meetings, the Team attended a fully attended reception in the Longworth House Office Building.

This year's national issues included:

- o Revitalization of U.S. Science & Technology Base through STEM (Science, Technology, Engineering and Math) Education and Careers – From Kindergarten to Post-Doctorate
- o Seeking a Vision and Policy for US Aeronautics Research
- o Space Access Needs to Support Future Human Missions
- o Department of Defense – Sustainable, Robust Funding for Science & Technology
- o Response to Military Space Acquisition Challenges
- o Encourage Collaboration between Agencies to Accomplish Associated Research Goals
- o The Use of UAVs in the National Airspace – Critical to Homeland Security
- o Securing Sustainable Life Science Vision

This year's local issues included:

- o Washington's Aerospace Technology's Criticality to Maintaining the U.S. Lead in Commercial Space
- o Washington's Aerospace Technology's Criticality to National Security
- o Washington's Space Technology's Criticality to Future Space Exploration

Next year, the goals are to double the size of Team Washington and to provide our Congressmen with a set of Washington specific issues on Aeronautics and Space. To learn more about AIAA's Public Policy or Congressional Visits Day please visit <http://www.aiaa.org> and click on "Public Policy" in the orange link bar.
-Contributed by Christian Carpenter.

Volunteer Speaker Opportunities

Several educators in the Puget Sound have contacted the PNW AIAA seeking volunteer speakers for their classrooms. The PNW AIAA would maintain a list of speakers and their topic or topics.

If you are interested or would like more information, please contact Paul Kostek at kostek@pnwaiaa.org.

Museum of Flight Restoration Center

Join us Saturday, May 20th, from 11 to 12 pm to tour the Museum of Flight Restoration Center in Everett, WA. Located on Paine Field, the Center's current projects include the de Havilland Comet, FM-2 Wildcat, the XF8U-1 Crusader, Boeing 727 prototype, and the Link trainer. Afterwards, we'll head over to the Jet Deck for lunch and the chance to watch the Paine Field runway traffic. Please RSVP to domingo@pnwaiaa.org.

PNW AIAA 2006 Section Elections

Interested in becoming more involved with AIAA? Consider running for an office within the PNW section. Visit our website, www.pnwaiaa.org, to view all the offices. Feel free to contact any of the current officers for more information on their positions.

Contact David Paisley (david.j.paisley@boeing.com) to be placed on the upcoming slate.

2006 Congressional Visit Day Part II

Each year AIAA sponsors Congressional Visits Day. This grassroots effort allows local AIAA members the opportunity to meet with their senators and congressmen to offer the use of AIAA's local expertise and to discuss both national and local aerospace issues. This year, the first annual "Team Washington" consisted of three local representatives: Christian Carpenter, Rod Kendrick, and James McClelland. The Team had a full day's schedule,

Section website: <http://www.pnwaiaa.org/>
 National website: <http://www.aiaa.org>

Please submit newsletter materials to the editor by the 28th of May for the June newsletter.

Outstanding Section Awards
 1972-1973
 1977-1978
 1978-1979
 1991-1992
 1993-1994
 1994-1995
 1994-1995

Membership Award
 1997-1998

Young Member Activity Awards
 1990-1991
 1991-1992
 1994-1995
 1995-1996

Section Special Event Awards
 1976-1977
 1977-1987
 1978-1979
 1982-1983
 1987-1988

Career Enhancement Award
 1997-1998

Newsletter Awards
 1994-1995
 1995-1996
 1996-1997

A PUBLICATION OF AIAA THE PACIFIC NORTHWEST SECTION
Address Corrections

Send to: **AIAA**
1801 Alexander Bell Dr.
Reston, VA 22091

Now make corrections on-line at
<http://www.aiaa.org>
 (Join/Renew/Update). Membership ID needed

Section Officers and Directors

Position	Name	Address (Mail stop if Boeing*)	Phone	Email address
Council				
Chairman	Dave Lednicer	2133 152nd Ave NE, Redmond, WA 98052	425-643-9090	dave@amiwest.com
Vice-Chairman	Paul Kostek	6M-EU	-	kostek@pnwaiaa.org
Secretary	Michelle Evans	02-10	-	michele.c.evans@boeing.com
Treasurer	Andrew McComas	2133 152nd Ave NE, Redmond, WA 98052	425-643-9090	mccomas@amiwest.com
Advisory Council	Howard Rush	14321 SE 63rd Street, Bellevue, WA 98006	425-746-5997	hmrush@comcast.net
Advisory Council	Christian Carpenter	P.O. Box 97009, Redmond, WA 98073	-	christian.carpenter@rocket.com
Advisory Council	Doug Ball	67-LH	425-234-1016	douglas.n.ball@boeing.com
Advisory Council	Kari Seppanen	14-KF	206-655-3356	kari.j.seppanen@boeing.com
Past Chairman	Dave Paisley	0R-MP	425-717-5691	david.j.paisley@boeing.com
Elected, non-voting				
Vice-Chairman-Elect	Scott Eberhardt	-	-	eberhardt@pnwaiaa.org
Secretary-Elect	Jon Lee	02-XJ	-	jonathan.p.lee@boeing.com
Treasurer-Elect	Chris Nelson	6712 183 rd St. SW, Lynnwood, WA 98037	-	ccnelson@comcast.net
Appointed				
Webmaster	Andrew McComas	2133 152nd Ave NE, Redmond, WA 98052	425-643-9090	mccomas@amiwest.com
Honors & Awards	Scott Eberhardt	-	-	eberhardt@pnwaiaa.org
Retired Members	Tom Holgate	2704 SW 314th, Federal Way, WA 98023-7842	253-838-0333	holgatz@aol.com
Newsletter	Emmanuel Domingo	03-JP	-	domingo@pnwaiaa.org
Nominations	Vera Martinovich	02-XJ	425-266-8664	vera.a.martinovich@boeing.com
Museum of Flight Liaison	Open	-	-	-
Pre-College Outreach	Scott Eberhardt	-	-	eberhardt@pnwaiaa.org
Public Policy	Karl D'Ambrosio	5026 18 th Avenue NE, Seattle, WA 98105	253-395-3710	karld@emfcowa.com
Young Professionals	Emmanuel Domingo	03-JP	-	domingo@pnwaiaa.org

* All Boeing people have the address of P.O. Box 3707, Mail Code xx-xx, Seattle, WA 98124-2207



AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS
PACIFIC NORTHWEST SECTION

PRST STD
 U.S. POSTAGE
 PAID
 SEATTLE, WA
 PERMIT #1686

AIAA
 Pacific Northwest Section
 Attn: Emmanuel Domingo
 1001 W. Casino Rd., A103
 Everett, WA 98204